Making Learning Engaging Through Interactive Games

Mr. Kartic Vaidyanathan

Interdiscplinary

IIT Madras

Week – 03

Lecture – 3

Today we will get started with another very exciting tool called Wordwall. It is very simple and elegant. It offers a very powerful way of creating very exciting interactives. The varieties that you will see are very rich yet simple to design and to do that you need to go to wordwall.net and sign in. I have just done the sign in and here you will find on top features, my activities, my results.

So you need to go and click on create activity. In create activity you will be given a lot of templates of different kinds. The first few set of templates that you find on top are the one that are available for all the users. And there are some licensed version that will come under pro templates towards the bottom.

Today we will explore the ones that are available for all users. And even that has a lot of variety. So, let us say here they have given a sort by most popular and then alphabetical. We will try to go with most popular. So, let us take the first one, matchup.

Match up is something like the simple match the following. So, can we have a theme and can we have your inputs? What can we base this out of? What can be the good topic? What can be the inputs given for this? Anyone? Formulas and compounds, synonyms, what are their options? we can try either. Let us go with formulas and for another activity we will use synonyms. So, there are other activities also which are similar. So, let us say formulas and compounds.

So, let me know the keyword H2O, then hydroxide, HCl hydrochloric acid, then H2S hydrogen sulfide right, correct. I am just trying to recollect. Okay, So, this is just a simple setup and you click done and the activity is ready. It is a simple drag and drop. Just say submit answers.

very straight forward and simple. It allows showing of the answers and then it allows showing of the correct answers in case any answer is incorrect it will show the correct

answers. And right now it is an individual play and therefore, there are no leader boards per say, but if we want to make it an activity which we will see a few minutes from now, then it will show how the performance of the players are. And this can be set as an assignment and given. Now once again we will try one or two more activities and then try and see, if you go to my activities on top, you will list, this will be listed as one of the activities.

There is something called my results. This happens when you set a created activity in the play mode and give it to students. Let us try this out actually in this my activities itself. Click on this. There is a way if you go down there is something called set assignment and you clear set this as an assignment you see options like whether the students need to enter their name that is an option or it can be anonymous entry or it can be integrated with Google classroom Whether it is deadline driven to be completed by a certain time and are there options to show the answers at the end, show the leaderboard, ability to replay, all these things are configurable options and then you do a start.

Now, you get a link that can be given to the players. And once this is done there is an entry that gets created in my results. Now this my results shows how the players perform when the activity is given so go to my activities and we have done a set activity and then my results shows the results now only when we play we will get to know whether the activity has been played or not, ok. So, let us do one thing. We have done a set assignment, right.

We have done a set assignment, we have gotten this. So, those of you who are on mobile, you can scan this code and try to play this activity. It will ask you to enter your name and then you play this simple activity. So all of you have scanned the QR code, not yet, ok I will keep it on display. You want me to zoom this, you are able to scan right ok.

Now let us go to my results as some of you have started playing and let us see what is happening here. So, it shows the performance and the gameplay statistics essentially, how many students have played and this being a very simple activity all of them have scored fully, otherwise it will show various different student performances and top score fastest to finish and time of submission and the detailed answers the breakup of the detailed answers. So, I mean in a different quiz all these statistics will vary because this happen to be a very simple quiz we design, but at least you are able to get an idea of the players the time of submission correct and incorrect answers and the time taken. You can order this by name, correct answers and time taken, various different sort metrics are available, very simple. So, this is as far as this very simple activity is concerned.

There are the another elegant part of this tool is that as I said there are many other

activities. Now you can flip this game to another template without having to redesign it. For example, instead of match up, if you can click on find the match, the same set of questions it flips it into a different template. This time we will attempt something wrong so that you are able to see the performance differently at the end. So, at the end So, it shows, I mean there are different configuration settings that allow retries.

So, this is being configured so that retries are allowed. You can configure it in such a way that there are no more retries and because we attempted multiple times, we got whatever we got wrong and whatever we got right is being displayed. This is one very elegant, very super elegant feature of this tool. Try to turn it into a crossword now. I will give it something wrong, let us see what happens, it does not, again give it something wrong.

So, now it is showing 2 out of 4, this does not necessarily insist on retries based on the configuration. So, 2 out of 4 is correct, show the answers and then here there is an option to start again ok. So, it allows multiple retries. And then this can be converted into a quiz. Just the same game getting elegantly reordered into different forms.

And then this game show quiz is another elegant way. I mean this is a different way. It is more like the some sort of KBC kind of a quiz. Let us see whether it needs to have a certain minimum number of questions. So, here it gives you options like you need to choose and all the questions here turn out to be simple, but let us say we will try to use the 50-50 co-option next time.

It gives some quizzes, quiz questions based on the correctness of the answer and some others based on the time taken, time based bonuses are there. Let us say we opt for 50-50 this time. It hides the two incorrect answers. Now, this time we will ask for extra time. I think it has a preset timer that is going on for 30 seconds.

If you see on the top left, let us see, let us ask for extra time. Let us see what happens. Yeah, it has added 2 more minutes to the question. So, this is another way to use the power up equivalents, power up or the KBC kind of equivalents and let us try to use double the score. So, let us double this chord.

So, here again it tries to, we need to read this and try and pick and choose the right power up. So, it is a fun way of shuffling So, instead of plus 200 was the best possible I guess. So, I did not notice it hard enough. So, if you are keen, we need to choose that option and then be ready and you will get the right power up. So very simple, the choice of questions that we chose are way too simple, but imagine in the context of a more complex quiz and look at the varieties that is enabled with the same set of questions.

So, not every game can be modified into every kind of game, but every game has at least a few variants into which you can modify. So, this is as far as creating an activity is concerned. We did match up, which other one do we try now? Let us try something novel. Let us try labeled diagram which is again very simple, but heavily useful in diagram based subjects. So, what do we do? Mark the parts, mark the countries on a map or something like that ok.

Add an image, again we will search for, it allows a set of images that can be searched. Should we use a plain world map or what do we call that? Physical world map ok, world map physical right? Where it is not labeled. Hopefully, this is a good choice. So, let us go with India. What else do you want? China, Japan, Brazil and what else? This should be fine and in each one there is a minimum and a maximum that can be specified.

Here I do not know whether you are able to read the fine print, it says minimum of 3 and maximum of 24 ok. So, for every activity there is a limit that is given and now we need to assemble the pins. Are you able to see the small sized pins here 1, 2, 3, 4, 5 and this is 2, 2 goes here, 1 goes here and 5 goes here, 4 goes here somewhere right or slightly below Brazil, here probably or Argentina is below Brazil right. So, Brazil is in the north of, north side of South America I guess. And this one is Japan, Japan is somewhere here ok.

Now we are done. Just need to drag drop. Very simple. We will try deliberately something wrong. Just to see how it shows the answers. Submit the answers and again it gives the correct and incorrect ones show answers now when you click on correct answers it will correct the answers.

So it will allow you to see the ones that you answered and the ones that the correct answers are ok. Again very powerful, very simple tool but very neat and elegant. This again other game varieties are available. We haven't created activities and results for these, we just created for the first activity that was just as a demo for, but for every activity that you create, you can create these additional things. Now, in the activities that we design, from a user interface perspective, I just wanted to give one thing.

From a user interface perspective, ok, let me choose the other one. It allows very elegant way of designing the front end. So, you have this plain form, right, white background and colored tiles. You can go and choose a theme. Let us say I choose the team called high readability and play it out.

It changes the font and background colors. This is supposed to be better readability compared to the earlier one. You can choose something else. So, it allows, it is a very

elegant way of taking the minimum inputs for designing the quiz and applying the other aspects of the game like themes, templates allows for easy modification. And then again fonts of course, you can choose, you can choose the fonts.

Here are some interesting options. Again, how much time to set, you can go without timer, you can count up or count down. And the layout can be specified here, separated or mixed layouts and end of the game what all needs to be done right, I mean show the answers or not. So, multiple different ways, very simple activities, but different ways of configuring it. So, once again I will go to the create activity screen and let us see whether there are other interesting variations. All of them are very self-explanatory and as you explore, you will be able to design them on your own.

Let us go through all of them. Match up quiz, flash cards, find the match, group sort, missing word, open the box. Open the box is nothing but a bunch of boxes which is associated with the question. Anagram, unjumble, matching pairs. We saw the game show quiz variant when we modified the first activity as a game show quiz. Hangman you know, flip tiles and in the pro templates again you have some additional things like maze chase, balloon pop.

So, it is a very simple tool and allows you to create a variety of activities. So, any questions, comments on these tools? What have you observed compared to what you have seen in the previous tools? Mostly very intuitive, you could have actually technically learnt it on your own, but I just wanted to give a brief overview and a few samples for you all to understand. For the free user you can create up to five activities for free and beyond five if you need to create you need to delete one up to a maximum of five you can have and if you need to explore many more and create more you need to have a paid user license. Any observations, comments on this? Yeah, go ahead. It is not more of competitive, it is a individual level player game.

Ok, so the competitive, yeah you are right, what you are saying is individually, instead of the group game that we did yesterday where the leader board was flashing, you are saying that this is more individually people play and later you measure results. Valid point, but then again I could have showed the leader board while you people were playing. So, in that sense it could have been made competitive, but this is offered a more lively competitive nature because it was constantly showing scores etcetera right. So, this is more individualized in that sense.

Yes, valid point. Any other observations? Multiple games with multiple customization options. You mean to say the same game design can be customized into multiple things without effort correct that is what you meant right. Not the fact that it offers multiple

game creations. What you meant was this design ones used in various different forms.

Yes, yes. So, multiple game forms and the same game can be without much effort played in a different mode. So, that is definitely a very powerful feature of word wall. Any anything else? Yes, it is a very good tool for school children, young children, but I think what we have noticed is when we have played this even in college environments, what matters is the kind of questions we design. See, we saw just examples of very simple questions.

That's just for illustration. For the audience that we design questions for, if we are able to design more creative questions, use visuals because we saw only text questions. Each question offers a visual also that you can embed. At least for one or two time reuse, it can be certainly used. During COVID times, we have played this as a revision in the life skills classes, first years. I do not know whether some of you attended at that time, 2020, 2021, but it was enjoyed by people.

So, but by and large, your observation is very correct. It is more applicable for school children, but actually also has been tried in schools higher education environments. Yeah. Because this comes with a lot of variety in one single game, you will have to match the column also. Yes, yes. Yes, the difference between this and quizzes is that quizzes offers more variety within the same quiz, but all quizzes will look similar.

Here what they are doing is, this is a game of its own. You want to play anagram, you play anagram. You want to play crossword, they have kept the game category separately. So, it is like offering some 15 different kind of games, word puzzle, quiz game, sorting game, they have kept the game mechanics unique to that game. Whereas, what quizzes offers is offering multiple varieties of question designs in a single game.

Yes. Sir, we have different to themes for a particular category of the like quiz, we have different things. For example, you can see the solar system, the ducting, wooden doors, like you can design Pre designed templates for themes. So, that is a that makes it more attractive I mean again for children in that context right. So, that there is no sameness you all need variety right. So, to bring that variety in easy and the best part is it is easy to do that.

See because we have software see one thing we forget is the end user ease of use. These are all designed for teachers. Now, if we provide powerful features, a lot of features in a software, but it is difficult to learn and use, most likely it is not going to be getting used even if the software has a feature. An average teacher is not expected to be a technical expert. Keep that end user audience in mind because their work is completely different

and how do you make it easy for an average teacher who is not probably very equipped technologically.

That purpose is served using these tools is what I would say. All they need to know is the subject matter, plug and play into these tools and then they the game is created. Sir, we can provide explanations also with the correct answers so that students can get the more knowledge about it. Good point, good point.

Quizzes has that feature. We did not explore that. Quizzes has the feature. In the gimkit also, in the last day also we played, they did not have any option like that. They did not, they just showed the right answers, but why it is not there? No, no, no, very good point. I think it is a very good feedback that can be given.

You are absolutely right. That feature is definitely worth having. Quizzes has that. Probably because of the these all these tools are very good tools extensively used probably they are the end user feedback has not captured this point and as they keep coming from teachers they may incorporate it but good point that is a very nice to have feature that you just do not give the answer but also explain Either how that answer has been arrived or give some contextual information related to the answer. Even if the why is not needed, why is not needed for a particular answer, you can give some contextual extra information around that answer. Yeah.

So, I am not able to see any collaborative way to develop this game. When you say collaborative way? Yeah, which is like multiple people can actually develop the game. You mean to say by can you little bit elaborate when you say collaborate and you mean share with somebody else correct share with somebody else. Ok fair point that is a that is a good feature of quizzes where you can share your your created quiz with a fellow teacher or a fellow student or whoever it is your friend or whatever it is and both of you can co-create and edit games. Have you know questions repetitions other don't i think those should be classified you know into spaces because firstly i would like to try games which you know repeat the question so that my learning is fortified and when i'm done with that the teacher can proceed to games which doesn't allow repetition so it's like if it's a loss it's loss so i shouldn't be penalized instantly from the start of the game So, you are saying you would rather prefer games where there are question repetitions during the learning process.

Yeah, correct. That is how a game should be designed and it should be designed in a easy way when we just for example purposes we designed it too easily, but an ideal game is one which has a match of skill and challenge match. It should neither be too complex nor should it be too simple. Both of them can put off the end user. So it should start off

with easy parts of the subject but have here and there some challenges for them to explore. Coming back to your question about collaborative mode of design, yes I think that is a worthy feature having in other tools too.

Probably they will incorporate as they get feedback. Now wordwall quizzes and other tools Gimkit and others also have something called community. Like you can create a quiz and host it in the community make it you can either keep it private or publish it to the community. In that sense they allow collaboration in some sense because you share it with the group and the others can get ideas and copy add the questions or modify them that kind of collaboration is but not like the live collaboration, co-designing something together that kind of collaboration is not there.

Community level. So, I think we have covered most of it. This also ok, I forgot to let us quickly go through the features. We will come to the interactives and printables shortly. Now, create using templates is known, switching template we covered, edit any activity is covered, themes and options we covered, assignments we covered, again sharing with other teachers you can make it a public property where others can look at it from the community. Another nice feature is embedding on a website.

So, it gives you that what do you call that I will show that exact piece. So, if you go to a quiz it will show there is a something called embed ok. So, this html code it gives you, you can plug it in any website and the quiz will be integrated easily there. You do not have to share the URL link it gets embedded into that this is another very nice feature to have you are making the life of the portal developer very easy. I mean you are making the integration part very easy I believe quizzes also has it I might have missed out I am not sure whether gym kit has it but these are nice to have features not that It takes away anything from all the three tools that we have seen so far.

They are all good in their own way, but this is one feature. The other one aspect that we probably did not cover or that I got to see in the features list is, where is that feature of printables, ok. Switch template, is it here? I am trying to figure out where the printables is. There is a way to create a printable form of, let us see this. Fine, I will let you know that.

So, wordwall can be used to create both interactive and printable activities. Why is printable is important? Offline and classes which do not have technology of any kind. There are still places, many places in India and around the world where mobile Even a regular mobile may be a luxury, forget about smartphones or there may be places without power, internet, Wi-Fi. You need all of that, all these are tools that are hosted in the cloud. So, for them to work, we need Wi-Fi, electricity and the right kind of mobile.

So, there is a, this is a very nice setting that Wordwall provides. Quizzes also provides some printables, but Wordwall provides little more varieties. It allows some kind of printables to be made and that can be printed and distributed to the students. I will exactly show you the procedure, I am not able to figure out right now, but I will try and explain how to do that.

It has a language. Yeah. . Yes, let us see that in the features list, right, ok, here, right, here, ok, got it. Now, there are two parts to this, one is I have not designed it in any of the European languages or that is what it is supporting primarily outside of English. What are the languages? I think it used to have Hindi, does it have Hindi? Where is it? Here, Hindi, ok. No, good point, good point.

This language is a very important point that you are bringing in. Now, there are two kinds of language features. One is the tool itself showing these instructions, etc. in Hindi for people who do not know English, I mean they have been trained in the regional mediums, even having the prompts, etc. in Hindi, logging in and creating. But all the tools so far, even though they may not have a Hindi as an interface, they support text typing in Hindi or any of the regional languages for that matter, Tamil, Telugu, Bengali.

The text questions that you design, even if you choose the English version of the word wall, the questions we created, for example, let us create an activity in Hindi or let us create one. The regional language part is a very important feature. Often we overlook it, I mean because we are all used to the English training, but glad that you brought it up. Let us try that out with a simple activity.

Let us say, should we try, what is this? Missing word right okay. Let's try with missing word. what I'm trying to say is let's say I usually use, okay what do we use for translation purposes, okay, what's the easiest way to I think easy Hindi typing dot com is a good website. I think, yeah. Let me try this here. So, this kind of text typing is allowed and supported by all tools, even though the interface itself may not be in. For example, these what we have seen as Hindi is the complete software being in Hindi with all the instruction menu items, but even if that does not get supported, this level support is very crucial.

because this is sufficient but the only difference is for the person they must know minimum amount of English for them to navigate whereas if the software itself is available in Hindi the chances are better that it will get more adopted so here I will try to add incorrect answer now we have to type something else Let us see if it supports. Yeah, okay. Let me choose the wrong one. Find this level support is there in all tools. Even if

the software is in English, this level support is, but I am glad you brought the language support.

I mean, it is so easy to overlook that, it may look like a very, very obvious thing. I have also grown in English medium kind of an environment, but I realized how important it is to have the regional language translation, because it is almost like 1 is to 5 reach or something. Regional language reach particularly to reach in towns and villages there is so many more number of regional medium schools. Ok, so so in india that is the thing and in foreign countries and some of the European countries it is not about city or town or village their nature itself is that science and everything is studied in their regional language some of the countries right they chose to do that like Japan or France or Germany know even until advanced engineering medicine everything is in the native. So, that is there that is why I think probably the adoption is more the whenever some of the softwares come they come more easily in the native language in the west. But glad that you brought this aspect I am glad we discussed this language aspect importantly in these tools while because we discuss always student engagement gamification and learning part but a crucial part of the learning is the language in which we learn in fact the new education policy actively encourages teaching in regional languages.

It may be a difficult or a challenge for a person who has already studied till 12th in English medium to switch over to regional, but when you start from first and when you go into your high school and then you continue to college etcetera, if you are able to do that smoothly, but English is essential though. See, it is important to have both, not one or the other. It is important to have both. Because English also helps us bridge across different languages.

Not everybody can learn every language. That is also a reality. But that mother tongue or the regional language helps in enhancing the learning aspect of it. So, good that we had this discussion. Anything else? Sir, it would be better if we categorize the questions into easy, medium and difficult.

Easy, medium and difficult, right. Okay. So that is a good point. So there are tools which allow categorization or probably allow differential time for different kinds of questions. Like in quizzes you might have seen yesterday that you can set time of answering for every question differently. Otherwise it will apply the standard. This tool does not have that feature but you can set the overall time and you can sequence the questions in the order of simple medium complex Although you cannot categorize them as simple medium complex but it is important that is a that is again a good input for learning purposes fair point ok so any others Before we close wordwall it is a very very simple tool but you know what simplicity is extremely essential. I don't know there are lot of

people who say and there is nothing right or wrong but I will try to understand from this group and also give my views There are highly engaging games, mobile, 3D, you have Unity etcetera, they have their place, you have AR, VR based games etcetera ok.

But then again they come with that time of design, effort of design and cost ok. Now, accessibility for those and let us say even if that such platforms are available, it has to be made so so intuitive for the end user for them to even use it. Let's say we design an elegant game. How many people, we talked about language reach, right? Sophisticated game has its benefits, but for end user to design and customize a sophisticated game to use on their own, that is the bigger challenge. And these tools, I think they are playing a role in bridging that gap. They may not have the most super most engaging of tools game features like what you see in your mobile phones but at least they are trying to bring one notch level or two notch level up over the standard lecture based learnings for children I think that is where the but we will see more of the advanced things also coming up in the upcoming years it is not only important to design It is important to make it easily usable by the end user.

It is not the coding that is a challenge. It is the availability and making up of the user guide and configuration settings that is the challenge. Okay. So, we will close it for now. Okay.